462 roaming far afield in search of water and pasture. They work in the fields, milk the animals (with the exception, in some cases, of camels), gather the firewood, and fetch the water. They are not 562 so careful to keep themselves veiled, finding it sufficient to draw their head cloths in front of their mouths. If she belongs to a nomadic tribe a woman will follow her husband in his search for grazing, carrying the household utensils, usually one large saucepan, on her head and the baby on her back. Only very occasionally do the women emigrate with their husbands, but we travelled with such a family on the start of their journey to Zanzibar to seek a fortune.

562 The remaining women are those of the poor townspeople, the 462 female servants, slaves, or Subians. The last two are least particular about veiling. The others, no matter how poor, will always cover at least the lower part of their faces. Toil is the portion of all of them: they labour in the gardens, help the men and animals [483] to draw water from the wells, and in many towns they are the principal water carriers, bearing their burden in skins slung across their backs. The servants and slave women in well-to-do houses lead an easier existence. They cook the food, do such cleaning as is ever done, and fetch and carry for the ladies of the household. Slaves may be taken as concubines, but find their husbands among their own class. They are much favoured, being brought up as members of the family, and, like many privileged retainers, usually become somewhat outspoken and domineering in their old age.

CHAPTER VII.

PRODUCTION AND RESOURCES OF THE HADHRAMAUT.

311 The natural resources of the Hadhramaut, such as they are, are principally agricultural. It is perhaps unnecessary to emphasize that only a very small proportion of the total area of the country, [131] which may amount to 35,000 or 40,000 square miles, is suitable for the growing of crops. As a general rule only wadis can be so used and the bulk of the land surface consists of the barren rock of mountains and steppes.

Tobacco.

249 The principal crop of economic importance is the well-known 438 Hamumi tobacco, and Gheil ba Wazir is the principal centre where 665 it is grown. Practically speaking the production in that place is entirely Government-directed and all the land is State land.

The nurseries are situated about three miles from Gheil at Al 312 Quf. Here there is an apparently inexhaustible, somewhat brackish, water supply at depths to about 30 feet from the surface. There are three deep pools which are tapped by subterranean channels for Gheil and Al Harth, the source of the Gheil water supply being called Humat al Farath, and that for Al Harth being called Humat al Harth. Along the line of channels from these pools there are

1: Ingrams G-5 (1934-35)1936 MM2 Hadhramaut MM2

at intervals of some 20 feet a series of shafts similar to those described in connection with the Mukalla water-supply. Humat al Harth is temporarily not giving water, as the level has fallen below the channel. At Al Quf itself there are a number of wells, and round each are nursery beds where the tobacco seedlings are grown. The beds are divided into patches three or four feet square and the seed close sown, so close that even where seed does not germinate the workers cut small scratches in the ground and plant fresh seed. When the seedlings are grown to a height of about three or four inches they are taken from Al Quf to Al Harth, about a mile and a-half away, and planted out in rows with intervals of a foot, or three-quarters of a *dhirra*, in beds of a size dependent on the amount of water. A bed is called *mutr*, plural *mutira*, and each is surrounded by a ridge to keep in the irrigation water. In due course the crop is gathered and dried. Drying barns are unknown.

The crop[1] is financed by the merchants who advance the money to the cultivators and are paid back either monthly or after the crop. In the case of the Government lands at Gheil some cultivators pay their rent in advance and some after the crop. The rent of the whole area of the Sultan's land at Gheil is assessed before each season and the figure required communicated to his representative there. This official then rents out the land at a figure per acre based on the total sum required.

The total annual value of the crop is now estimated at five lakhs of which the Sultan receives Rs.120,000 in duty and ground rent. Production costs are estimated at three lakhs, so that the profit to the cultivators is Rs.80,000. In order to foster the local consumption of tobacco, there is a monopoly of imported cigarettes and pipe tobacco.

Of tobacco, Mr. H. M. Heald in his report of the Agricultural Mission to Mukalla says that in the Meifa valley " the cultivation of the tobacco received more attention than any other crop. . . . The seed was sown in a small plot of land which, in the large villages, had been heavily manured with sheep dung mixed with fine earth. When 40 days old the plants were transplanted into the small beds at distances of one foot apart, and again manured with fish ; irrigation varied in the villages but generally every seven days.

" Topping of the terminal buds took place after all the leaves had been formed and the plants were ripe for cutting in four or five months, according to district and season. The plants were dried on the ground first singly and then in small bundles, and afterwards hung up in rows. After drying again in bundles, they were covered with sacks to promote fermentation, and then the plants were taken into the houses for further drying in the dark, and ready for transporting to the coast in a week or so. Practically no grading was done . . . and I am sure " he writes, " better prices would be obtained if more attention were paid to selection."

1 [Tobacco -- Analyst]

60

137 *Rakh* (*Salvadora persica* L.) is a very popular fodder with camels
314 and is found in abundance in the Wadi Maseila; it is also fairly
246 common round Du'an but practically non-existent to the north of Shibam. Goats do not eat it. It also provides the Beduins with their favourite toothsticks.

Khuweira, a small plant (*Cassia obovata* Coll.), is very popular with both camels and goats. There are of course many other plants on which they graze.

Manufacturing Industries.

496 Minor Industries include the extraction of simsim oil with camel
262 mills. In Mukalla there is a large oil factory with 31 compart-
249 ments in each of which a camel turns the usual primitive wooden machinery for expressing the oil from sesame seed. The oil extracted by this primitive process is much more popular for food that that extracted by modern machinery. It is considered much
[231] sweeter. The residue forms a cake which is fed to camels.

339 There are kilns for lime-burning immediately to the east of
438 Mukalla and in many other places. In particular most excellent
353 lime is made in Seiyun and Tarim. This is applied as a plaster to the interiors of the houses and polished with smooth flints till it resembles marble.

28 Hides from the interior are tanned in Mukalla but none is exported. At Gheil ba Wazir I saw a leather-worker using Mukalla-tanned skins. Skins are also tanned in Shibam. The dyeing of cloth, weaving, and mat-making are other minor industries. Shihr in particular is well known for its beautiful
323 weaving. There are potteries in many places, and I saw the process
346 in Gheil ba Wazir. There are also good workers in silver at Gheil ba Wazir, Shihr and Mukalla.

Fisheries.

228 The manufacture of fish fodder and manure and the preparation
251 of dried fish is a large industry of the coastal area. From an
262 export point of view, fish products come third in importance. They
231 are :—
438

Sifa (fish oil). Not much of this is made in either Mukalla or Shihr. The bulk is imported from the Mahri coast.

Wazif (dried *'aid* and other small fish). A great quantity of this is prepared in Mukalla and still more in Shihr. The sea is alive with these small fish, the catching and preparing of which gives work to many hundreds of fishermen. In both Mukalla and Shihr there are godowns for these fish which are stored before being taken to the interior for manure, camel fodder, or human consumption. The very small *'aid* fish are used for manure only, but the larger ones are eaten uncooked

631 grazing lands, belong to them, and they range from Shihr to
101 Seihut and up to the Manahil and Jabri. The Ma[illegible] country
619 lies to the north and east of them, and the 'Awābitha and Al Heik live to their west.

619 The tribe had a defensive and offensive alliance with the Kathīri, and were always a great source of trouble to the Qu'aiti. They were a byword for murder and robbery, owing to their systematic pillaging of travellers, until the Qu'aiti put an end to these activities by stringent measures some years ago. He now pays them an annual subsidy and has a " B " agreement with them and they
[489] have ceased to be troublesome. Since coming to heel the tribesmen regularly load goods from Shihr for Shibam, Seiyun and Tarim, and continually visit Shihr, Hami, Dis, Qus'eir and Reida. They are mainly nomads and own about 3,000 loading camels but no riding animals.

They are the worst enemies of the Seibani, with whom they are continually at war: Inter-tribal feuds exist between several their own clans, but all unite in the face of a common foe under the leadership of the Beit 'Ali clan, whose chief, 'Ali bin Salim Habrish, lives at Gheil Bā Yamīn and Wadi 'Arf and is the
[623] *Muqaddam* of the Zei. A " Council of Elders " is summoned at Gheil Bā Yamīn to decide matters of tribal importance, and the tribesmen of the various clans offer their rifles to prove their goodwill in acceptance of the decision of the Elders. The Mansabs of the tribe are Muhammad bin Muhammad, 'Abdul Bari, and Hussein 'Abdulla al Isma'il of the Āl 'Aidarus, but the Bā Shamakha clan are under the influence of 'Abdur Rahman bin 'Abdulla and 'Abdul Qadir Āl Shibab of the Āl as Saqqaf. These Mansabs interfere in cases of serious tribal disputes or for the accomplishment of truces between fighting clans or tribes.

631 The clans of the Hamumi live in two districts, Al Ma'rab (the
101 Western) which is the smaller district and is situated to the North
619 of Shihr, and Al Mashqās (the Eastern) which lies to the North East of Shihr. The Bahasan at Tanbūl and the Yamīni are the clans living in Al Ma'rab, but also included in the district are their allies the Sha'āmila, the Bā Habān, and the Meseilīyin. The Yamīni, who are allied to the Seibani and live under their pro-
[249] tection, possess 200 camels, and the Bahasan own 100. The latter cultivate *tanbuli* leaf, which is chewed by the people of Shihr and Mukalla, and they have accordingly been nicknamed " at Tanbuli ". The Qu'aiti has a " B " agreement with them.

The other clans mentioned in the list live in the district of Al Mashqās, consisting of deserts, fields, and wadis. [illegible] to the Seiyids of Beit Hamūda inclusive [illegible] clans have a special system and their chief is the head of the Beit 'Ali. From the Beit Ghatnīn to the 'Udūl inclusive all the clans have their own

* [Hamumi Zei -- Analyst] & [See p. 92, category 116 -- Analyst]

24:Meulen and Wissmann T-3 (1931)1932 MM2 Hadhramaut MM2

to this rich domain, lies at the edge of the plateau of coral stone. As one approaches from the coast one barely sees the gardens of palms; soon one finds oneself in front of a high, white wall, with a great, fortified gate, which, apparently, is kept closed even during the day. The traveller, as he waits, can only see, close to the wall and rising boldly up above it, the Sultan's massive palace which now serves as barracks for soldiers.

We were obliged to wait at a respectful distance from the menacing, fortified gateway until our letter of introduction had been taken to the palace, read and deemed satisfactory enough to admit us into the tobacco town. Ghēl Bā Wazīr, as a city, has not many beauties except for the large and ancient palace and a few mosques, and we were glad to accept the invitation of one of the authorities of the place to proceed at once to the gardens and to the Sultan's country-house in the cultivated district behind the town. We, therefore, drove without pausing through the place, which reeked of tobacco. The valley side of the town, that is the north side, has less defences than the south, whence start the great thoroughfares to Makalla and esh-Shiḥr. Nowadays motor lorries convey the bales of tobacco, which are two yards long, from el-Ghēl to Makalla. Manure for the tobacco fields is brought from the coast on camels.

A richly cultivated area begins immediately behind the town. The Sultan owns much tobacco-growing land, which is said to be a great source of income to him. Close behind the town are two gardens, in each of which is a newly-built summer residence. We enter the first garden with the smaller house which is set aside for the use of the male members of the household. In the other garden is a much larger building for the wives and their female attendants.

The gate is immediately shut behind us, our following of inquisitive youths remains outside, and we stand in the silence of the luxuriant garden, trying to accustom our eyes to the deep shade under the blossoming fruit-trees. It looks just as

24:Meulen and Wissmann T-3 (1931)1932 MM2 Hadhramaut MM2

351 if we had been transported bodily into a bit of the Indies. The fruit-trees best known in that country are represented here, and a sultry, moist heat permeates the shadows of this richly watered garden.

529 In front of the garden villa, built in a modern style, but not yet quite finished, is a cemented swimming-pool about 300 feet long and of the same width as the building. It joins onto the stairs of the terrace, and a trim rowing-boat lies motionless on the crystal clear water. To do us honour the basin has been filled by means of an engine-pump, and, although the water is warm, we show our appreciation at once by enjoying a bathe, and a row in the boat.

• 249 277 367 Our host, who is acting for the Sultan, is a tobacco-grower as well as an official. He says that the Ḥumūmī tobacco can only be grown here. They are trying to cultivate the same kind in Lahadj, behind Aden, and in the Yemen; as the climate and the soil are not similar the result is a product which in perfume and taste is inferior to that grown here. Cultivation in el-Ghēl is carried to a very high pitch of refinement. The tobacco-plants are manured three times: with guano, with fish, and with the dung of beasts and men. Pure water is used for irrigation, not too much and not too little. Each kind of dung is applied to the plant at the right time. The best guano comes from an island on the coast of Somaliland, for which the British authorities have given a concession. A second kind of guano is found on islands near Bīr ʿAlī, to the west of Makalla, and near Aden. The entire harvest of tobacco is exported to Egypt, and from there a part of it goes to Syria and to the countries on the Red Sea. The Ḥumūmī tobacco is broken up and cut into wide strips, and is smoked in water-pipes. The stalks can be used at the same time and for this reason the plants are dried whole, not the leaves alone. They are then bound into large bundles an packed into oblong bales, the weight of a camel's load, that is to say 300 lbs. The price of such a bale is nowadays 120 to 130 rupees.

1 [of the SULTAN of GAʿI BI WAZIR — ANALYST]

24: Meulen and Wissmann T-3 (1931)1932 MM2 Hadhramaut MM2

system of drinking- and at the same time cooling-bowls, among poor and rich alike. 271

Our host spoke with longing of beautiful, rich Java and of the good years that he had passed there, and it was obvious that he would have liked to return there but for leaving his family behind, for the Ḥaḍramī woman does not leave her country with her husband. It was clear, from the friendly farewell, that I had not been wrong in thinking that my years passed as a civil servant in Netherlands India would facilitate my travels in Ḥaḍramaut. 167

They all went a little way with us to see us off and were photographed at their own request. We followed the broad *sēl*-bed [1] crossing the plateau surrounded by terraces of about 300 feet high. There, where the plateau ends, lies, at a height of 50 feet the village of Ḥimem on a hill at the edge of the wādī to which it gives its name. At the foot of the hill, there are very tall coco-nut trees, the last that we shall see for the time being, for the altitude is already 3000 feet. A conduit full of water, fed by little springs at the edge of the wādī, irrigates fields of *dhura* and of neatly-planted and well-cultivated tobacco. It is true that it is not first-class Ḥumūmī tobacco that is raised here, but even so it commands a good market price. 138 312

The evening falls and we are obliged to camp soon after leaving Ḥimem. The valley has here penetrated into the sandstone and the conglomerates under the eocene limestone. Here at a height of 3000 feet the nights are already cold. According to our Bedouins, who are good water-tasters, the water also improves in proportion as one gets further away from the coast; all salt and bitterness gradually disappears from it. 133 271

In our bivouac at Ḥimem we had to put away again a great harvest of plants and insects; the swallow-tail butterfly was also found here. 136

The mayor of Ḥimem came to visit us in our camp. He told us that his village of 200 to 300 inhabitants grows tobacco, 249

[1] The bed through which the water flows for a short time after rain.

24:Meulen and ...ssmann T-3 (1931)1932 MM2 Hadhramaut MM2

which is its chief source of livelihood. Only three of his men have emigrated to Java, but he has heard so much good of that land of promise that he wishes to go there himself, though it would mean leaving a family of six children behind. To my question as to whether he had performed the *ḥadjdj*[1] his answer was in the negative.

We have met very few travellers on the way from Makalla to Ḥimem — only a few camels and donkeys laden with bananas and other fruits for the Makalla market.

On the 11th of May, directly after breaking camp in the morning, we began by ascending a long *ʿaqaba*[2] and it was two hours before we reached the top. A little farther on we passed a place called Kubr, which our Bedouins pretended was the last spot for hours ahead, where we should find water, and they urged us strongly to take the afternoon's rest here. Immediately after I had agreed to this, it dawned upon me that the story about the water had only been invented in order to call a halt. The spot was very unfavourable, for water had to be fetched from some distance away out of the 20 feet deep bed of the wādī, where there was a well. We were obliged to seek shelter from the sun, in a fissure of the rocks which hardly gave room enough.

Von Wissmann used the opportunity to climb the steep precipice leading up to the plateau, in company with one of the slave soldiers. The eocene limestone, of which the 60 feet thick upper stratum is formed, falls away everywhere in a perpendicular drop, so that it is difficult to find a scaleable spot in it. Our Bedouins did not believe that the *Efrendjī* could get up it in his shoes, and his attempts were watched with curiosity from our bivouac. When Von Wissmann, born and bred among the rock-mountains of Styria, conquered a very hazardous bit of wall and his soldier could only follow

[1] The *ḥadjdj* is the pilgrimage to Mecca, one of the five pillars of the religion of Islam.

[2] *ʿAqaba* (عقبة) is a road over or up, or down, or over some part of, a mountain; cf. Lane, *Arabic-English Lexicon*.

8:Gt. Brit., Colonial Office G-3 (1951-52)1954 MM1 Aden
Hadhramaut MM2

The above figures are derived from estimates checked by sampling, except in the case of the long-staple cotton for which actual figures are available. 241

Outstanding yields of long-staple cotton have been obtained ; yields of one ton of seed cotton with a ginning out-turn of 36 per cent often occur. Yields of irrigated wheat and barley are generally high : wheat yields of 1½ tons per acre are common in the lift-irrigated districts.

Crop Processing

Cotton Ginneries. Long-staple cotton is ginned in two ginneries operated by the Abyan Board, and the total output in the 1951–52 season was 7,206 bales. At the end of 1952 plans were in hand to combine ginning equipment at one ginnery in Lower Abyan. 248 249

Oil Mills. Throughout the Protectorate sesame is crushed in primitive pestle and mortar crushers worked by camel power.

Marketing

Crops for domestic consumption are sold direct by the producer to the consumer, or through merchants, or at markets which are often weekly events in the villages and towns of the Protectorate. 443

Tobacco is exported from the Protectorate by merchants who trade in the Colony of Aden and Middle East markets. 439

Substantial quantities of fresh produce, vegetables and fruit are exported from the Protectorate to the Colony to be sold in the Colony markets.

No marketing boards for export crops exist, but the Abyan Board is at the moment in sole control of the grading, ginning and export of long-staple cotton grown in the Protectorate. 248

Research

Research on cotton and cotton breeding is carried on by the Abyan Board. 242

In the Hadhramaut, the Hadhramaut States contribute funds to an experimental area supervised by an officer of the Department of Agriculture. In this area, which was opened in 1952, investigations on crop production, crop varieties, treatments and water duties have been started.

In the Western Protectorate many varieties of deciduous fruits and citrus have been introduced over the past 14 years, and it is considered that there are sufficient trees in bearing to start on nursery propagation of suitable types. Initial trials have been made at a high-altitude demonstration area on the Audhali Plateau.

Control of Pests and Diseases

Since 1942 efforts have been made, generally with success, to control locust breeding in the Protectorate, which is subject to constant invasions by locusts from other areas. The control of covered smut of sorghum by the use of sulphur for seed treatment has been introduced to areas where damage from this plant disease is common.